

Colorado Department of Transportation
Structure Inspection and Inventory Report (English Units)

Highway Number (ON) 5D: 0025A 1

Mile Post (ON)11: 209.155 mi

Bridge Key: F-16-NK

Inspection Date: 3/17/2010

Sufficiency Rating: 88.6 Not Eligible

Rgn/Sectn 2E/2M: 68
 Trans Region 2T: 02
 County Code 3: 031
 DENVER
 Place Code 4: 20000
 DENVER
 Rte.(On/Under)5A: 1
 Signing Prefix 5B: 1
 Level of Service 5C: 7
 Directional Suffix 5E: 0
 Feature Intersected 6: SOUTH PLATTE RIVER R
 Facility Carried 7: RAMP TO I 25 ML
 Alias Str No.8A:
 Prll Str No. 8P
 Location 9: IN DENVER
 Max Clr 10: 99.99
 BaseHiway Net12: 0
 IrsinvRout 13A: 0000000000
 IrsSubRout No13B: 00
 Latitude 16: 39d 43' 30"
 Longitude 17: 105d 00' 58"
 Range18A: 68 W
 Township18B: 68
 Section18C: 9
 Detour Length 19: 2.0 mi
 Toll Facility 20: 3
 Custodian 21: 1
 Owner 22: 1
 Functional Class 26: 11
 Year Built 27: 1987
 Lanes on 28A: 3
 Lanes Under 28B: 0
 ADT 29: 63,000
 Year of ADT 30: 2005
 Design Load 31: 6
 Apr Rdwy Width 32: 55.0 ft
 Median 33: 0
 Skew 34: 99.00 °
 Structure Flared 35: 1
 Sfty Rail 36a/b/c/d: 1 1 1 1
 Rail ht36h: 37 "in"

Hist Signif 37: 5
 Posting status 41: A
 Service on/un 42A/B: 6 5
 Main Mat/Desgn 43A/B: 6 5
 Appr Mat/Desgn 44A/B: 0 0
 Main Spans Unit 45: 3
 Approach Spans 46: 0
 Horiz Clr 47: 54.5 ft
 Max Span 48: 129.0 ft
 Str Length 49: 362.0 ft
 Curb Wdth L/R 50A/B: 0.0 ft 0.0 ft
 Width Curb to Curb 51: 54.5 ft
 Width Out to Out 52: 57.5 ft
 Deck Area: 20,815. sq. ft
 Min Clr Ovr Brgd 53: 99.99
 Min Undrclr Ref 54A: N
 Min Undrclr 54B: 0.0 ft
 Min Lat Clrnce Ref R 55A: N
 Min Lat Undrclr R 55B: 0.0 ft
 Min Lat Undrclr L 56: 0
 Deck 58: 8
 Super 59: 8
 Sub 60: 7
 Channel/Protection 61: 7
 Culvert 62: N
 Optng Rtg Method 63: 5 No rating
 Operating Rating 64: 74.1
 Inv Rtnng Method 65: 5
 Inventory Rating 66: 44.0
 Asph/Fill Thick 66T: 005 "in"
 Str. Evaluation 67: 7
 Deck Geometry 68: 9
 Undrclr Vert/Hor 69: N
 Posting 70: 5
 Waterway Adequacy 7: 9
 Approach Alignment 72: 8
 Type of Work 75A:
 Work Done By 75B:
 Length of Improvment 76: 0.0 ft
 Insp Team Indicator 90B: Gold Team (Ken
 Inspector Name 90C: STADIGM
 Frequency 91: 24 months
 FC Frequency 92A: -1
 UW Frequency 92B: -1
 SI Frequency 92C: -1
 FC Inspection Date 93A:

UW Inspection Date 93B:
 SI Date 93C:
 Bridge Cost 94: \$ 0
 Roadway Cost 95: \$ 0
 Total Cost 96: \$ 0
 Year of Cost Estimate 97:
 Brdr Brgd Code/% 98A/B:
 Border Bridge Number 99:
 Defense Highway 100: 1
 Parallel Structure 101: N
 Direction of Traffic 102: 1
 Temporary Structure 103:
 Highway System 104: 1
 Fed Lands Hiway 105: 0
 Year Reconstructed 106: 0000
 Deck Type 107: 1
 Wearing Surface 108A: 6
 Membrane 108B: 2
 Deck Protection 108C: 1
 Truck ADT 109: 5 %
 Trk Net 110: 1
 Pier Protection 111: #
 NBIS Length 112: Y
 Scour Critical 113: 5
 Scour Watch 113M:
 Future ADT 114: 75,000
 Year of Future ADT 115: 2025
 CDOT Str Type 120A: CBGC
 CDOT Constr Type 120B: 4.
 Inspection Indic 122A:
 Inspection Trip 122AA:
 Scheduling Status 122B:
 Maintenance Patrol 123: 7
 Expansion Dev/Type124:
 Brgd Rail Type/Mod 125A/B:
 Posting Trucks 129A/B/C: 0 0 0
 Str Rating Date 130: 9/14/1998
 Special Equip 133: -1
 Vert Clr N/E 134A/B/C: X 99.99 0.00
 Vert Clr S/W 135A/B/C: X 99.99 0.00
 Vertical Clr Date: 1/1/1901
 Weight Limit Color: 139: 0
 Str Billing Type: U
 Userkey 1 - System: ONSYS
 Userkey 7-Update Indic:

Inspector Name: STADIGM

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Element Inspection Report

Elm/En	Description	Units	Total Qty	% in 1	CS 1	% in 2	CS 2	% in 3	CS 3	% in 4	CS 4	% in 5	CS 5
26/4	Conc Deck/Coatd Bars	(SF)	20,815	100 %	20,815	0 %	0	0 %	0	0 %	0	0 %	0
104/4	P/S Conc Box Girder	(LF)	2,148	100 %	2,138	0 %	10	0 %	0	0 %	0	0 %	0
210/4	R/Conc Pier Wall	(LF)	201	100 %	201	0 %	0	0 %	0	0 %	0	0 %	0
215/4	R/Conc Abutment	(LF)	63	65 %	41	8 %	5	27 %	17	0 %	0	0 %	0
234/4	R/Conc Cap	(LF)	134	100 %	134	0 %	0	0 %	0	0 %	0	0 %	0
314/4	Pot Bearing	(EA)	7	100 %	7	0 %	0	0 %	0	0 %	0	0 %	0
325/4	Slope Prot/Berms	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
326/4	Bridge Wingwalls	(EA)	2	0 %	0	100 %	2	0 %	0	0 %	0	0 %	0
331/4	Conc Bridge Railing	(LF)	724	100 %	724	0 %	0	0 %	0	0 %	0	0 %	0
340/4	Superstr Cnc Coating	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
341/4	Substr Conc Coating	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
342/4	Sign Attachment	(EA)	2	100 %	2	0 %	0	0 %	0	0 %	0	0 %	0
358/1	Deck Cracking SmFlag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0
359/4	Soffit Smart Flag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0
501/4	Channel Cond	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
502/4	ChannProtMatCond	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
504/4	BankCond	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0

Elem/Env	Description	Element Notes
26/4	Conc Deck/Coatd Bars	4 to 5 inches of asphalt. Light rutting and raveling along many longitudinal cracks, with branching cracks. Patterned cracks in the #1, and #2 Lanes of Span 1. Longitudinal seams are opening up in a few spots.
104/4	P/S Conc Box Girder	No entry in 2008, and 2010. Previous reports stated a 6 foot long horizontal crack near midspan of Girder 1G, approximately 3 feet up from the bottom flange; (could not verify when looking at the exterior face on 03/14/2006). seepage from the drain hole in Girder 1G, about 15 feet from Pier 2. INTERIOR: Several scattered rock pockets in webs, especially near the bottom haunch, (see 03/14/2006 PHOTO of one in Web 3A near midspan), that is almost 8 feet long, and many places along it are over 2.5 inches (Swiss Army knife) deep, could see a small amount of a rebars. There may be a light vertical or diagonal crack in the end walls, and there are light cracks around the access holes, nothing significant. Span 1 Girders have trash and waste inside them; discarded by transients, prior to the girders being adequately locked, between 1998 and 2000.
210/4	R/Conc Pier Wall	Some light vertical cracks with efflor., on the Left side of the P4 Wall. Otherwise pier walls look good.

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215/4	R/Conc Abutment	At A1 only. Some delam., and spalling with exposed rebar, along the bottom flanges of the box girders, where vertical bars go across the cold joint of the superstructure and breastwall (see 03/14/2006 PHOTO), which looks very similar to the 03/21/1990 PHOTO. The delamination(s) extend from the Left edge of the boxes (worst end), about 75% of the way along the bottom of superstructure. The spalling is on the Left end only.
234/4	R/Conc Cap	At Pier 2, and both sections of Pier 4. Some light vertical cracks with efflor., especially the Left half of P4, (see 314/2006 PHOTO), a horizontal crack on the Left end of Pier 4.
314/4	Pot Bearing	Look OK.
325/4	Slope Prot/Berms	Rock riprap on the slope at A1. Concrete pads at the A1 berm. Look OK.
326/4	Bridge Wingwalls	At A1 only. The joint between the wingwall and retaining wall, is open 3.5 inches at the Left (including evazote), and settled 2.5 inches measured at the top of the rail; this has broken the plastic sheet seal embedded in the edges. The Right side joint is open 2.5 inches, and settled 1 inch; (see 03/12/1998, 03/06/2002, and 03/14/2006 PHOTOS).
331/4	Conc Bridge Railing	Type R concrete railing. Typical light vertical cracks. The Left rail, especially, has minor scrapes and scuffs from bumpers and tires; due to the curvature of the road, and vehicle maneuvering where highway ramp splits. A few minor chips in the Left rail. There is an 18 inch long horizontal crack on the outside of the Left rail, near the pier, probably due to impact.
340/4	Superstr Cnc Coating	Some graffiti and painted over graffiti, on girders at A1. Some spots of peeling on the bridge railing, mostly along the base near the roadway.
341/4	Substr Conc Coating	Some graffiti and/or painted over graffiti on the abutment wall, and pier walls.
342/4	Sign Attachment	Sign Structure F-16-PQ (see 03/14/2006 PHOTO), across Span 1. Connections at both edges of the deck. A vertical crack with heavy efflor. and seepage, on Forward face of the Left mount block.
358/1	Deck Cracking SmFlag	See ELEMENT 26
359/4	Soffit Smart Flag	Timber forms cover the bottom of the deck inside the girders, no leakage seen previously, did not enter in 2008, or 2010. Possible seepage inside Girder 1G, evidenced by (seepage) through the drain hole in the bottom flange. A few transverse cracks with efflor. in the overhangs.
501/4	Channel Cond	South Platte River. Slow flowing. A bike path in Span 3, fair alignment at the bridge, but there is a 90 degree curve just upstream. Gravel and small rock bed.
502/4	ChannProtMatCond	Rock riprap on the outside bank of the curve, just upstream.
504/4	BankCond	A steep bank on the outside of the curve, with some small trees, and a few bushes. The inside curve has trees, bushes, and grass.

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Maintenance Activity Summary

MMS Activity	Description	Recommended	Status	Target Year	Est Cost
352.01	Cln & Wash	3/6/2002	-1	2013	350

Clean out scuppers and deck drains.
Trim trees at the N.W corner, the branches are growing over the railing.

353.06	Br Dk Rpr	3/6/2002	-1	2013	300
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The deck drain pipe at the north end of Pier 3, needs to be extended and re-directed away from the pier wall.

353.08	Br Dk Rpr	4/16/2004	-1	2013	3000
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Seal cracks in the asphalt deck surface.

358.06	Substr	3/6/2002	-1	2013	1500
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Partially seal joints between retaining walls and ends of wingwalls (might be a good idea to allow some drainage but do not allow erosion above), and repair the spalled joint at the Right side. The Rear approach asphalt is badly cracked from settling.

354.04	Suprstr	3/6/2002	-1	2013	10000
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Consider removing trash from inside the Span 1 box girders, and consider removing timber formwork and other debris from inside box girders.

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Bridge Notes

Parking is best on the extra-wide Right shoulder, of 6th Ave. over the Platte, not on the ramp.
Access doors are very heavy. Span 1 doors are 5 to 6 feet above the flat berm with concrete pads. LARGE
Locks take key #15, located on left side folder.
Bucket truck needed to enter Spans 2, and 3, no locks or need for locks on these; VEER OFF RAMP from SB
I-25 to E.B. 6th Ave.
Trees growing over the railing at the N.W. corner.
Scuppers and drains are clogged.
The Rear approach is settled over an inch, and has a couple of wide transverse cracks.
The attenuator barriers have some damage.

Inspection Notes

TIME: 9:05 TEMP: 45 WEATHER: Clear
This structure has a gore point and carries traffic before it divides to F-16-OE ramp carries traffic to I25 S.B
and F-16-OG takes the traffic to I25 NB.
Modular Joint(s) at Pier(s) 4 are included with the respective bridges F-16-OG and F-16-OE.

Scope:

☒ NBI: ☒ Element: ☐ Underwater: ☐ Fracture Critical: ☐ Other: Type: Regular NBI

Inspector: STADIGM

Inspection Team:

Inspection Date: 03/17/2010

Inspector

Inspector